# Capacity Auction Reforms Prompt & Deactivations

## *IMM Feedback on the Design Proposal*

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# Outline

1. Background: IMM support for prompt & seasonal capacity market, important price formation and mitigation principles (January 2024 memo)
2. Deactivation Process: Timeline, Revocability, Early Deactivation
3. Deactivations: Market Power Assessment
   a. Overview of current rules
   b. Options and tradeoffs
4. Competitive Offer Formulation/IMM Price Determination
5. Seller-Side Mitigation (single year capacity offers)
   a. Overview of current rules
   b. Recommended changes to current rules
6. Buyer-side Mitigation

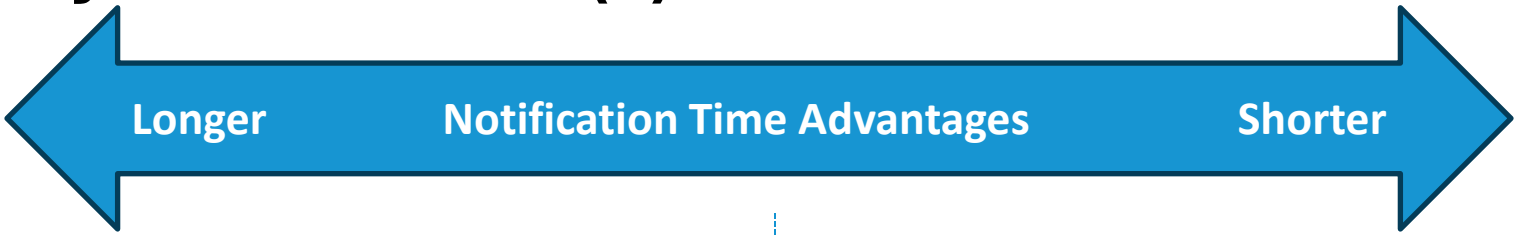
# Background (1)

- IMM memo to the NEPOOL MC: "IMM Thoughts on a Prompt and Seasonal Capacity Market" (January 2024) outlined our support for the Prompt and Seasonal Capacity Market
- Provided thoughts on Price Formation and how competitive capacity offers may change given the timing of the prompt market; revenue adequacy objective and demand side value on capacity (Net CONE) are unchanged
- Covered role of Mitigation in Price Formation and ensuring just and reasonable rates, including important principles:
  - Minimize interference with open and competitive markets
  - Help ensure that offer prices reflect levels that would otherwise be expected in a competitive market (when market power is a concern)
  - Condensed and efficient process so offers do not become stale between the review process and auction
  - Transparent mitigation process, including rules and guidance on what costs IMM should allow in mitigated offer prices

# Background (2)

- In this presentation we outline the IMM's current thinking on aspects of the detailed design and provide feedback for consideration by stakeholders and the ISO

# Deactivation Process: *Timeline*, Revocability, Early Deactivation (1)




Better positioned to manage reliability risks associated with aging generation fleet (see Figure 1-10 of IMM Annual Report)

Increases pool of resources for market response

Increases chance of transmission solution if transmission violation triggered

Shortens period of RMR capacity in auction

More informed economic deactivation decision

Shorter duration accommodates deactivating resources with higher failure rates

# Deactivation Process: Timeline, *Revocability*, Early Deactivation (2)

- Two-year notification time reasonably balances reliability and efficient market goals; however, we support revocability of a deactivation notification should the economic outlook for the resource materially improve
- Low barriers to exit (and re-entry) in market design are particularly important in the context of uncertainty in demand growth, new entry timing, and barriers to entry (see section 6.1.1 of 2024 IMM Annual Report for discussion)
  - can help mitigate concerns with disorderly exit
  - support eliminating the "repowering" threshold requiring an investment of $417/kW for a returning resource

# Deactivation Process: Timeline, *Revocability*, Early Deactivation (3)

- While we support Revocability as a potentially valuable option for the region, we suggest consideration/further discussion of a number of design details:
  - Process for demonstrating to the ISO or its IMM that a change in expected market conditions has improved the economics of the resource
  - Revocation/withdrawal deadline (impacts on auction parameters, IMM seller-side cost review process)
  - Timing of interconnection termination and system planning assumptions regarding resource status and network capacity release
  - Allocation of any incurred transmission costs triggered by deactivating resource

# Deactivation Process: Timeline, Revocability, ***Early Deactivation*** **(4)**

- Earlier deactivation before two years is reasonable to account for circumstances whereby the:
  - economics of the resource do not support continued operation, or
  - resource experiences a catastrophic equipment failure
- Early deactivations should be subject to a Market Power review by the IMM

# Deactivations: Market Power Assessment (1)

- In the Forward Market Retirement Review process, the IMM performs a Conduct Test and a Net Benefit Test (NBT).
- **Conduct Test** based on 5-year discounted cash flow model producing break-even capacity price the resource requires over its remaining economic life.
  - The Conduct Test Threshold is 10%; Participant Price > 1.1 * IMM Price
  - This IMM breakeven price is input into the auction, unless the participant decides to be an “Unconditional Retirement”
  - The Conduct Test will be very similar in the Prompt market (participant will provide Yr 1-5 capacity price estimates rather than Yr 2-5)
- The **Net Benefit Test** (NBT) is an additional market power test applied to resources electing to retire unconditionally
  - Determines if a Proxy Bid (IMM Price) is to be used in auction clearing
  - Identifies if the uneconomic retirement of a resource allows the market participant’s portfolio to capture more capacity revenues, if so, then the participant trips this market power test

# Deactivations: Market Power Assessment (2)

- Under current rules, NBT is performed at the point on Demand Curve corresponding with the total existing qualified capacity
  - this can lead to NBT inconsistent with expectations of market conditions (e.g. see slide 16 for illustration of existing qualified capacity relative to demand curve)
  - we support the ISO proposed revisions to better reflect the expected intersection of market supply and demand
- The example in the Appendix illustrates how the Proxy Bid for Unconditional Retirements is used in auction clearing
  - and how capacity procurement (prices and quantities) can be impacted

# Deactivations: Market Power Assessment (3)

- IMM evaluated three approaches to mitigating market power through “uneconomic” capacity deactivations
  - Including capacity as a Proxy Bid in the auction (Status Quo)
  - Market Power Charge
  - Referral to FERC Office of Enforcement
- Market Power Charge is IMM’s preferred approach, however the Status Quo approach is adequate (with the ISO proposed improvements to the NBT)
  - Provides the strongest deterrent to exercising market power and more likely to deliver efficient price formation for current and *future* auctions
- The next slide lists important tradeoffs in the assessment of the three options

# Deactivations: Market Power Assessment (4)

| Market Power Charge | Proxy Bid | Referral |
|---|---|---|
| – Strongest deterrent<br>– Goal to preserve efficient price formation for immediate and future auctions<br>– Should seek to address clearly uneconomic retirements, but suppliers' concern about IMM application in practice creates risks | – Insulates consumers from higher marginal clearing price due to "uneconomic" retirement<br>– Deals with single year impact; challenging beyond one year (similar for MPC)<br>– Produces non-uniform pricing and disconnect between prices and marginal value of procured capacity | – IMM preference for relying on clear Tariff-based market power mitigation measures where possible<br>– Lengthy regulatory process, low visibility to stakeholders<br>– Disgorgement generally distributed to affected parties, civil penalty to US Treasury |

# Competitive Offer Formulation/IMM Price Determination (1)

- Competitive offers continue (in a prompt market) to reflect net avoidable costs of taking on a capacity supply obligation for a delivery period (a.k.a. net going forward costs)
- Costs considered in IMM cost reviews (seller-side conduct test) as avoidable must be consistent with competitive offer formulation
  - Moving the auction closer to delivery will change how participants construct their competitive offers for a one-year (or season) obligation
- Historically, the **Pay for Performance** (financial) cost has been a significant component of cost reviewed by the IMM
  - includes assumptions around scarcity events, performance during those events and the system balancing ratio for each event
- **Risk premiums** capturing resource performance risk and higher than expected shortage conditions are included in the IMM cost reviews

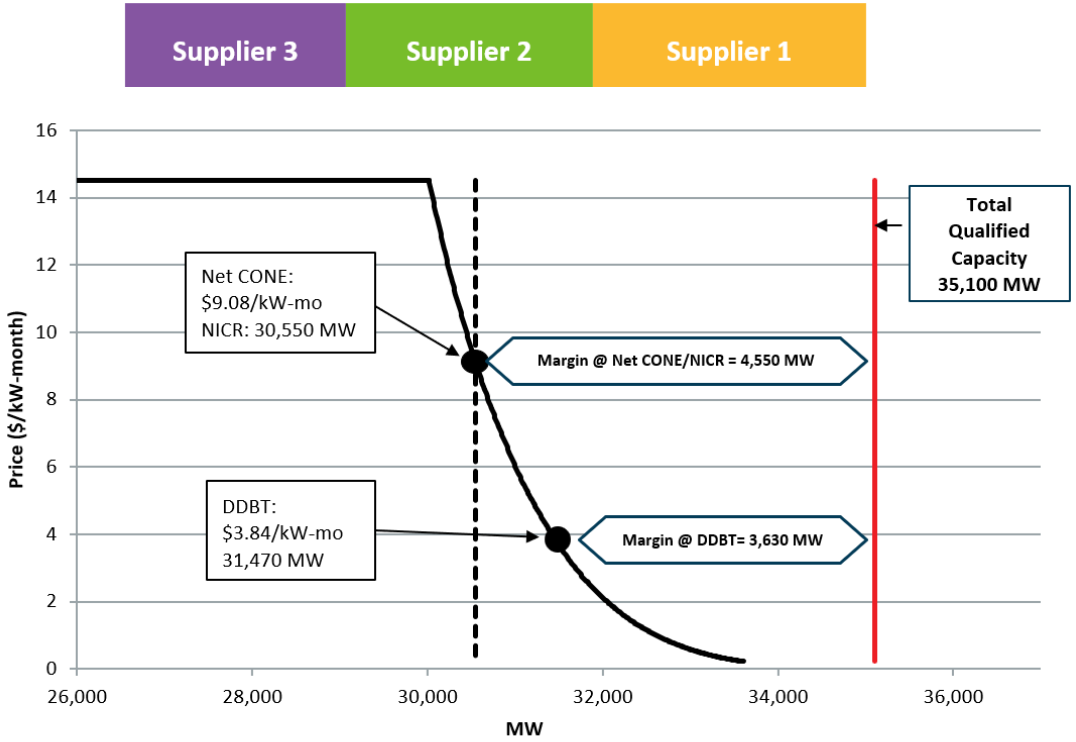
# Competitive Offer Formulation/IMM Price Determination (2)

- **Opportunity cost** is also an allowable cost component and most commonly applies to import capacity resources (NY capacity prices)
  - Opportunity costs would include other sources of revenues such as alternative sale of capacity to other customers (e.g. data centers)
- In practice, most **capital expenditures** may be mostly unavoidable in a prompt capacity market and will not be a component of a competitive offer
  - Investments are made based on longer-term projections of EAS and Capacity Market Prices and other revenue sources
  - Conversely, without investment a resource may experience performance degradation and require a risk premium to cover performance risks
- Clarity in the rules, guidelines documents and cost workbooks on allowable components of net going forward costs is important for an effective and efficient mitigation process

# Seller-Side Mitigation (1)

- Applies to single year (delivery period) capacity offers, most commonly Static De-List Bids and Import Offers across existing tie lines
- Current mitigation rules relies on two tests for Static De-list Bids
  - Structural Competitiveness (Pivotal Supplier Test) and Conduct Test (Cost Review)
  - Mitigation applies to a resource that belongs to a Pivotal Supplier **and** fails the Conduct Test (Offer > 1.1 * IMM Price)
  - Bids below the dynamic de-list bid threshold (DDBT) are not subject to IMM mitigation (DDBT will become the Capacity Cost Review Threshold, or CCRT, in the prompt market)
- In FCA 14-18, there have been no Pivotal Suppliers at the system level (see section 2.3 of the 2023 IMM Annual Markets Report)
  - In practice, mitigation of static de-list bids has been extremely infrequent

# Seller-Side Mitigation (2)




Qualified Capacity is calculated as FCA 18 Qualified Existing Capacity - Retirements + Cleared New Capacity (rounded to nearest 100 MW)

- PST is calculated at criterion (NICR). A supplier with a Portfolio size > Margin (4,550 MW) is considered pivotal
  - Recent auctions have cleared close to the DDBT (margin of 3,650 MW)
- Largest suppliers (3 shown here) are not pivotal and not subject to mitigation

Note: The impacts of marginal resource accreditation and seasonal demand curves are not captured in the above graph and will impact the PST calculations.

# Seller-side Mitigation: Recommended Changes (1)

- The IMM recommends that the ISO adopt a Conduct and Impact (C&I) approach to seller-side mitigation (see section 6.1.2 of 2024 IMM Annual Markets Report)
- The C&I approach would be conceptually similar to energy market mitigation
  - Allows more flexibility with respect to supply offers; price impact determined by replacing supply offers with IMM prices (for resource failing Conduct Test)
  - Participants assuming a CSO at an expected loss should have recourse to seek cost recovery at FERC
- Recommendation Objectives and Potential Benefits
  - a more accurate assessment of market power
  - a consistent mitigation framework
  - a C&I approach could reduce the influence of the CCRT
  - a C&I approach could conceptually incorporate buyer-side mitigation rules

# Seller-side Mitigation: Recommended Changes (2)

- A more accurate assessment of market power
  - With the entire supply curve in a sealed bid auction an accurate assessment of the impact of uncompetitive bidding can be performed
  - Actual supply curve analysis is superior to relying on Pivotal status to inform the mitigation decision
  - Addresses issues with over- and under-mitigation associated with the PST
- A consistent mitigation framework

| | | Tests in Market Power Mitigation Process | | |
|---|---|---|---|---|
| **Supply Type** | **Category** | **Size threshold** | **Conduct** | **Impact** |
| New Supply Entry | Buyer-side | 5 MW | Yes | Yes* |
| Deactivation | Seller-side | 20 MW | Yes | Yes** |
| Existing supply | Seller-side | Pivotal Supplier | Yes | No |

* The impact assessment can be included in the form of an Incentive Rebuttal option that a seller can submit

** it is proposed that the impact of the deactivation be assessed through a Net Benefit Test

# Seller-side Mitigation: Recommended Changes (3)

- Would a C&I approach reduce the influence of the conduct review threshold value (currently known as the DDBT)?
  - Observed clustering of dynamic delist bids below the DDBT is unlikely to be indicative of uniformity of net going forward costs; there are likely some resources that have higher NGFC but take their chances at delisting in the dynamic range
  - Some Suppliers have indicated a potential reluctance to engage in the IMM cost review process
  - However, bidding behavior consistent with NGFC (including above the DDBT) is important for efficient market outcomes
  - Does a more targeted use of IMM Prices (based on Impact rather than size), and flexibility with Offer Prices, address some participant concerns?
- A C&I approach could conceptually incorporate buyer-side mitigation rules
  - Above and below-cost capacity offers could have offsetting impacts that results in “competitive” pricing outcomes; this aspect would require further evaluation if pursued

# Buyer-side Market Power

- Narrow set of resources subject to “Lane 3” Market Power Assessment by the IMM
  - Non-sponsored policy resources *and* >5 MW *and* Load-side interest
  - Participant has an option to demonstrate no net benefit from below-cost offers (“incentive rebuttal”)
- The Conduct Test is conceptually similar to a deactivating resource, whereby the IMM will assess the economics of the resource *entry* decision
  - 20-year discounted cash flow model to calculate the break-even price at the time of the investment decision
  - If mitigated, resource cannot offer below the IMM Offer Floor Price
- In a prompt market (whereby the resource is commercial) incentives to exercise seller-side market may also be an issue for capacity that has not cleared in prior auctions

# Summary

- IMM is supportive of the move to a prompt auction timeline, marginal accreditation and seasonal auctions
- 2-year deactivation notification is reasonable, with the ability to revoke should the economic outlook for the resource materially improve
- Ability to terminate sooner than 2 years is reasonable subject to IMM review
- While IMM prefers the Market Power Charge for deterring physical withholding and ensuring efficient outcomes, the alternative Proxy Bid approach is adequate to safeguard consumers
- IMM recommends eliminating reliance on the Pivotal Supplier Test for seller-side mitigation (1-year capacity offers) and replacing it with a Conduct and Impact approach

# Questions

# APPENDIX

*Proxy Bid Example for Addressing Physical Withholding Concerns through Unpriced Retirements*

# Proxy Bid Approach for Non-Priced Retirements

## Example Assumptions:

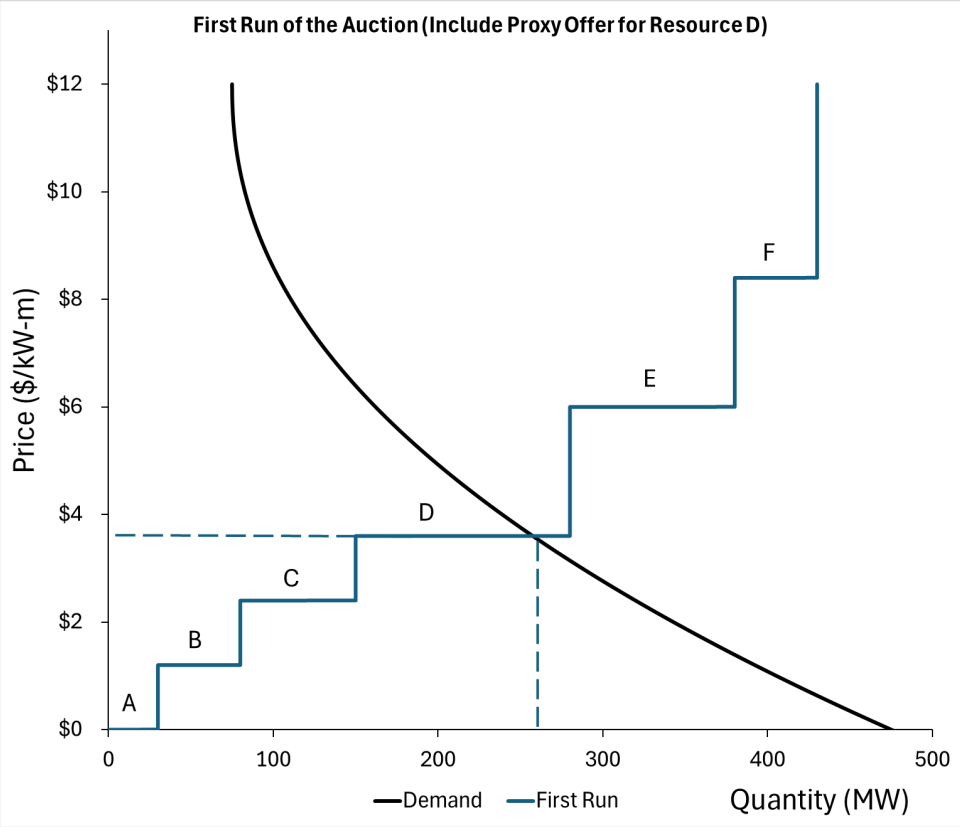
- 6 Resources (A-F)
- **Resource D** is Deactivating
- Resource D fails the Conduct Test and NBT; its IMM Price is $3.60/kW-mo
- All capacity is rationable

| Resource | MW | Price ($/kW-mo) |
|---|---|---|
| A | 30 | $0.00 |
| B | 50 | $1.20 |
| C | 70 | $2.40 |
| **D** | **130** | **$3.60** |
| E | 100 | $6.00 |
| F | 50 | $8.40 |

**Terminology in this example:**

- **Auction Economics**: the Price and Quantities at the intersection of Supply and Demand in Run 1 and Run 2 of the auction
- **Auction Procurement:** The Actual Quantities procured, and Prices paid to resources from Run 1 and Run 2 of the auction

# Proxy Bid Approach for Non-Priced Retirements (2)



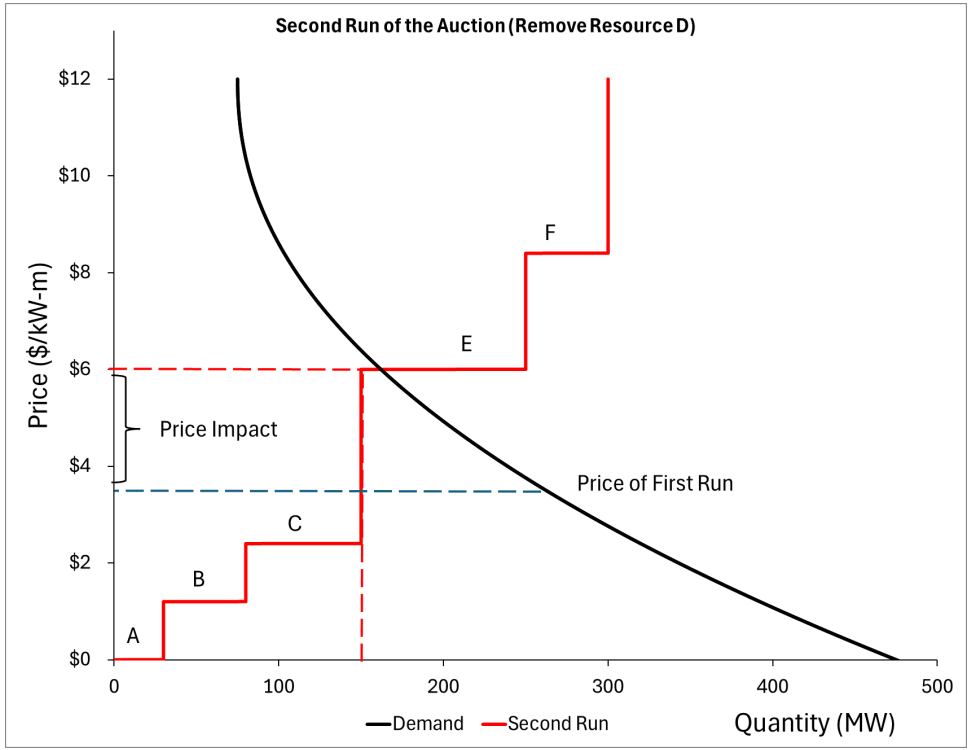

**Auction Economics**

| Resource | Quantity (MW) | Price (kW-mo) | Value ($m) |
|---|---|---|---|
| A | 30 | $3.60 | $1.30 |
| B | 50 | $3.60 | $2.16 |
| C | 70 | $3.60 | $3.02 |
| D | 104 | $3.60 | $4.49 |
| **Total** | **254** | | **$10.97** |

**Auction Procurement**

| Resource | CSO (MW) | Price (kW-mo) | Payment ($m) |
|---|---|---|---|
| A | 30 | $3.60 | $1.30 |
| B | 50 | $3.60 | $2.16 |
| C | 70 | $3.60 | $3.02 |
| **Total** | **150** | | **$6.48** |

# Proxy Bid Approach for Non-Priced Retirements (3)




**Auction Economics**

| Resource | Quantity (MW) | Price (kW-mo) | Value ($m) |
|---|---|---|---|
| A | 30 | $6.00 | $2.16 |
| B | 50 | $6.00 | $3.60 |
| C | 70 | $6.00 | $5.04 |
| E | 20 | $6.00 | $1.44 |
| **Total** | **170** | | **$12.24** |

**Auction Procurement**

| Resource | CSO (MW) | Price (kW-mo) | Payment ($m) |
|---|---|---|---|
| E | 20 | $6.00 | $1.44 |

# Proxy Bid Approach for Non-Priced Retirements (4)

**Summary: Total Resource Payments**

| Resource | CSO (MW) | Price ($/kW-mo) | Payment ($m) |
|---|---|---|---|
| A | 30 | $3.60 | $1.30 |
| B | 50 | $3.60 | $2.16 |
| C | 70 | $3.60 | $3.02 |
| E | 20 | $6.00 | $1.44 |
| **Total** | **170** | | **$7.92** |

| Summary | MW | Avg. Price ($/kW-mo) | Value ($m) | |
|---|---|---|---|---|
| Proxy Bid Approach | 170 | 3.88 | $7.92 | **Actual Outcome** |
| Auction Value w/ Resource D at IMM Price (1st Run) | 254 | 3.60 | $10.97 | **Competitive Outcome we want to achieve (no physically withholding)** |
| Auction Value w/ Resource D | 170 | 6.00 | $12.24 | **Uncompetitive Outcome we want to avoid/deter (physical withholding)** |